Review of Research Papers of $k$-cordial Labeling of Graphs

M.V. Modha

M. D. Science College, Porbandar-360575, Gujarat, India


Concise Summary:
Author: Mark Hovey.

This paper contains the results on $k$-cordial labeling. The author proved that trees are 3, 4 and 5 cordial. Further the author conjecture that all trees are $k$-cordial for all $k$. The author provides a partial classification for cycles and complete graphs to become $k$-cordial. He also proved that for even $k$ and $k > 4$, most graphs are not $k$-cordial.

Evaluation of Paper:
1. Positive Aspects:
   (i) The language used in the paper is easily comprehensible.
   (ii) The concept of A-cordial labeling is introduced and further categorization of it is done as $k$-cordial, $e$-cordial, $n$-cordial and 2-cordial.
   (iii) The author has extensively worked on $k$-cordial labeling.

2. Negative Aspects:
   (i) The paper is indistinctly written.
   (ii) Each and every case of the theorem clarified with examples.

3. Discrepancy:
Deviation in the proof of the result Cycles are $k$-cordial for all odd $k$. (for $n < k$)

Further Comment:

In this paper the author has predicted that for $k$ even and $k > 4$, most graphs are not $k$-cordial. But in the course of the paper he has not been able to prove it correctly.


In this paper the author proved the conjecture “Cycles are $k$-cordial for all even $k$” made by M. Hovey. The author also proved the $k$-cordiality of crown and given a general statement for $k$-cordiality of Wheels under certain Conditions

Evaluation of Paper:
1. Positive Aspects:
   (i) The language used in the paper is easy to understand.
   (ii) Examples are cited for each result to make it understandable.

2. Negative Aspects:
   (i) The pattern in the proof of the result Crowns are $k$-cordial is not written in general form.
   (ii) More examples should be given.
   (iii) The proof the statement wheel $W_n$ is $k$-cordial is not given.

3. Discrepancy:
The Proof of the Theorem Crowns are $k$-cordial is not at all clear.


Concise Summary:
Author: Maged Z. Youssef.

This paper includes some necessary conditions for a graph to be $k$-cordial for certain values of $k$. The author also gives some new families of 4-cordial graphs.

Evaluation of Paper:
1. Positive Aspects:
   (i) The language used in the paper is easy to understand.
   (ii) The paper is mathematically sound.
   (iii) He has given relation between $k$-cordial labeling and other labeling.

2. Negative Aspects:
   (i) The pattern is not given in the proof in all theorems.
(ii) Not a single general result is given to justify the title of the paper.

**Further Comment:**

The necessary condition for $k$-cordial labeling is given without proof for certain values of $k$.

**REFERENCES**


